Intermediate Algebra Name_____Date _____ Period_____

WORD PROBLEM WEDNESDAY

Absolute Value Inequalities

Example 1: Pretend that you are allowed to go within 9 of the speed limit of 65mph without getting a ticket. Write an absolute value inequality that models this situation. Write an inequality that shows the speed you are allowed to go without getting a ticket. What are the acceptable speeds on that road?

$|x - 65| < 9$

Desired amount Acceptable Range

The cereal Cheerios' net weight on the box says 14.5 ounces, but actually the factory is cool with any weight that is 14.5 ± 0.25 ounces. Write an absolute value inequality to represent all possible weights for the box of Cheerios and find those weights.

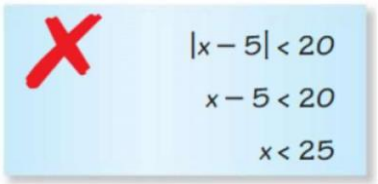
According to the NFL rules, a football used in a game must have an air pressure of 13 psi ± 0.5. Write an absolute value inequality that models the range of the acceptable air pressure then solve.

In a poll of 100 people, Misty's approval rating as a dog is 78% with a 3% of error. Write an absolute value inequality that models this situation. Solve the inequality to find the range of Misty's approval rating.

If a bag of chips is within .4 oz of 6 oz then it is allowed to go on the market. Write an inequality that models this situation. Solve the inequality to find the allowable weights.

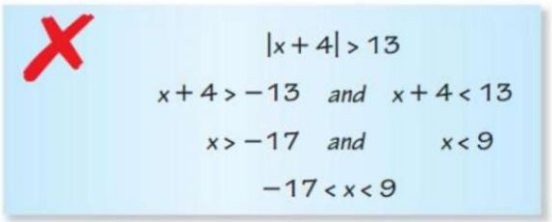
Amtrak's annual passenger revenue for 1995-2015 is modeled by the formula R = -40|x-11|+990 where R is the annual revenue in millions of dollars and x is the number of years since January 1, 1995. In what years was the passenger revenue $790 million?

Error Analysis: (a) Circle the error, (b) explain the error in words, and (c) solve the equation to identify the correct solution.



What is the error?

Correct Solution:



What is the error?

Correct Solution: